

# **READY-TO-ASSEMBLE ARTICLES OF FURNITURE**

## **Reference to Related Application**

This application claims priority to U.S. provisional application S.N. 60/339,172, filed on December 11, 2001, in the name of the same inventor and bearing the same title.

## **Background of the Invention**

The present invention relates generally to articles of furniture. More specifically, the invention concerns furniture that is "ready-to-assemble" or knock-down.

Knock-down or ready-to-assemble furniture has long been a welcome substitute for the traditional, one-piece, articles of furniture. Ready-to-assemble, or RTA, furniture is significantly cheaper than its more formal counterpart, which makes it a viable option for the college student furnishing a dorm room or a first-time apartment dweller or home buyer. Moreover, RTA furniture is popular with children because of the wide range of configurations that can be achieved with this type of furniture.

RTA furniture is also popular with parents because it represents an affordable alternative for furnishing a child's room or recreation or TV room that is subject to abnormal wear and tear. It is well-known that children, and particularly teenagers and young adults, can be extremely hard on furniture. Rather than spend a large amount of money on traditional furniture that will have its ordinary useful life cut short, many parents prefer to furnish with cheaper articles of

furniture, such as RTA furniture. While the cheaper furniture may have a shorter life, the much lower cost makes periodic replacement preferable.

Knock-down or RTA furniture has been around for decades. Most prior RTA furniture relies upon interlocking notches and maintaining a tight fit between the spliced notches to keep the article of furniture solid. Of course, over time, the notches would wear and the fit between the components would become so sloppy as to render the article nearly unusable.

In addition, most prior RTA furniture has required specific sets of components, configured to generate a specific type of furniture. Thus, if a consumer wanted a chair, it was necessary to obtain a chair kit, and if a sofa was desired, a sofa kit was required. Knock-down furniture of this type does not take advantage of one possible benefit of RTA furniture, namely the ability to instantly convert one article to another article using many of the same components.

There remains a need for RTA furniture that is both inexpensive and versatile. The furniture must be able to achieve solid construction and to maintain its integrity over long periods of usage. In addition, the RTA furniture must have a desirable, and sometimes fun, appearance.

## **Description of the Drawings**

These needs are met by a novel RTA furniture array that is reflected in the following written description together with the accompanying figures.

**FIGS. 1a-1c** are front, back and side perspective views of a ready-to-assemble article of furniture in accordance with one embodiment of the present invention.

**FIG. 2** is a top pattern view of the components of the RTA article of furniture illustrated in **FIGS. 1a-1c**.

**FIG. 3** is an exploded view of the components shown in **FIG. 2** in an orientation for assembly of the RTA article of furniture.

**FIG. 4** is an enlarged perspective view of a locking component of the RTA article of furniture of the illustrated embodiment.

**FIG. 5** is a front perspective view of a sofa rendition of the RTA article of furniture in accordance with a further embodiment of the invention.

**FIG. 6** is a front perspective view of a table or ottoman rendition of the RTA article of furniture in accordance with a further embodiment of the invention.

**FIG. 7** is a perspective view of an alternative embodiment of a chair rendition of the RTA article of furniture in accordance with the invention.

**FIG. 8** is a perspective view of an angular chair rendition of the RTA article of furniture in accordance with the invention.

**FIGS. 9a-d** are perspective, side partial cross-section, top and front views of a formal chair embodiment of the RTA furniture of the present invention.

**FIGS. 10a-d** are perspective, side, top and front views of a padded chair embodiment of the RTA furniture of the present invention.

**FIG. 11** is a top elevational view of a locking member for use with the chair shown in **FIGS. 10a-d**.

**FIGS. 12a-c** are perspective, side partial cross-section, and front views of a rounded chair embodiment of the RTA furniture of the present invention.

**FIGS. 13a-b** are perspective and front views of an asymmetric chair embodiment of the RTA furniture of the present invention.

**FIGS. 14a-b** are perspective and side views of a thick chair embodiment of the RTA furniture of the present invention.

**FIGS. 15a-b** are perspective and side views of a traditional chair embodiment of the RTA furniture of the present invention.

**FIGS. 16a-d** are perspective, side, top and front views of a love seat or bench embodiment of the RTA furniture of the present invention.

**FIGS. 17a-d** are perspective, side, top and front views of a beach chair embodiment of the RTA furniture of the present invention.

**FIGS. 18a-d** are perspective, side, top and front views of a bookshelf embodiment of the RTA furniture of the present invention.

**FIG. 19** is a perspective view of a sofa table embodiment of the RTA furniture of the present invention.

**FIGS. 20a-c** are perspective, side, and front views of a desk embodiment of the RTA furniture of the present invention.

**FIG. 21** is a perspective view of a server or buffet embodiment of the RTA furniture of the present invention.

**FIGS. 22a-d** are perspective, front, side and top views of a lamp embodiment of the RTA furniture of the present invention.

**FIGS. 23a-d** illustrate steps for assembling the lamp shown in **FIG. 22a**.

**FIGS. 24a-d** are perspective, front, side and top views of a lamp embodiment of the RTA furniture of the present invention.

**FIGS. 25a-d** illustrate steps for assembling the lamp shown in **FIG. 24a**.

## **Description of the Preferred Embodiments**

For the purposes of promoting an understanding of the principles of the invention, reference will now be made to the embodiments illustrated in the drawings and described in the following written specification. It is understood that no limitation to the scope of the invention is thereby intended. It is further understood that the present invention includes any alterations and modifications to the illustrated embodiments and includes further applications of the principles of the invention as would normally occur to one skilled in the art to which this invention pertains.

Referring to **FIGS. 1a-1c**, one embodiment of the ready-to-assemble article of furniture of the present invention is illustrated. In this embodiment, the furniture is a chair **10** that is formed from several components. Specifically, the chair is formed by a pair of side panels **12**, a back panel **14**, a base panel **16** and a pair of locking members **18**. Each of the components is preferably formed of wood, either as solid wood elements or as pressed-wood or composite elements. Alternatively, the components can be formed of plastic or other suitable material. In order to maintain the ready-to-assemble attributes of the chair **10**, the material of the components should be sufficiently rigid, yet light-weight to facilitate the construction of the chair. For an alternative embodiment that potentially increases the comfort of the furniture, one or more panels may be padded, for example, padded wood.

As a further feature, each of the panels can be of a different color, which can be especially appealing for use in a child's bedroom or play room, or as a

unique décor element. In the case of wood panels, each panel can be painted a different color. If the panels are formed of a plastic, the plastic itself can be molded in a specific color. As explained below, a number of like panels having different colors can be offered at a retail outlet so that the consumer can select panels of the same or different colors to suit their decorating needs.

As shown in more detail in **FIG. 2**, the chair components include pre-cut or pre-formed features for ornamental and functional attributes of the chair **10**. For instance, the side panels **12** exhibit a generally trapezoidal configuration, and define a pair of legs **23a**, **23b** for supporting the article of furniture. The legs **23a**, **23b** must be configured to support the weight of a person sitting in the chair **10** and to resist bending as the person shifts from side-to-side in the chair. In the illustrated embodiment, the legs contact the floor along the edge of the side panels **12**. Accessory components can be supplied to alter the floor contact, such as feet that can be engaged or attached to the edge of the legs.

The side panels **12** in this embodiment are identically configured, each including a closed base slot **20** and a back notch **22** formed at the top edge **12a** of each panel. The base slot **20** is disposed within the interior of the panel **12** and can be oriented at an angle, as depicted in **FIG. 2**. Alternatively, the base slot **20** can run generally parallel with the lower edge of the legs **23a**, **23b**, so that the base will sit horizontal in the assembled article of furniture. For the purposes of the illustrated embodiment, the base slot **20** is angled to achieve a comfortable seating position in the assembled chair **10**. Likewise, the back notch **22** in each

side panel can extend at a non-vertical angle relative to the top edge of the panel **12**, again to achieve a comfortable seating position.

The back panel **14** includes a downward leg tab **25** that serves as an additional leg for supporting the article of furniture **10**. Like the legs **23a**, **23b**, the leg tab **25** exhibits a trapezoidal shape, adding to the overall appearance and aesthetics of the chair **10**. The back panel **14** further defines a pair of side notches **27** at opposite sides of the panel. The notches **27** are sized to interlock with the back notches **22** in each of the side panels **12**. The panel **14** includes locking extensions **29** that extend beyond the bottom end of the notches **27** for reasons discussed herein.

The base panel **16** defines an interior back slot **32** that is sized to receive the leg tab **25** therethrough. The slot **32** and tab **25** can be sized for a tight-fitting relationship to enhance the tightness of the assembled chair **10**. The angled edges of the trapezoidal tab **25** can provide a progressive fit as the tab is passed into the slot until the edges of the tab contact the end walls of the slot **32**. The base panel **16** also defines a pair of relief notches **34** at the front edge **16a** of the panel that interlock with the ends of the slots **20** in the side panels **12**. Opposite cut-outs **36** are formed at the back edge of the panel **16** to accommodate assembly of the chair **10**. The relief notches **34** and cut-outs **36** define side portions **16b** of the base panel. These side portions **16b** are preferably configured for a tight fit through the slots **20** of the side panels **12** with the side edges **16c** situated outboard of the side panels.



The final component of the article of furniture is the locking member **18**. The member **18** includes a wedge portion **40** that is sized to slide into the slot **20**. The member also defines an extension **42** that is formed by a cut-out **44** in the locking member. Again, the significance of these elements of the locking member will be understood with the following explanation of the assembly of the chair **10**.

This assembly of the RTA chair **10** is depicted in the exploded view of **FIG. 3**. The dashed arrows in the figure help illustrate the positioning and movement of each of the components to produce the final assembled chair. In a first step of the assembly process, the side panels **12** are engaged to opposite sides of the base panel **16**. Specifically, the side portion **16b** at one side of the base panel is passed into the base slot **20** until the cut-out **36** contacts the inside surface of the side panel. The base panel **16** is then moved forward within the slot **20** so that the relief notch **34** is interlocked with the end wall of the slot. In this position, the front edge of the base panel **16** will be oriented generally flush with the front edge of the side panel **12**. The process is repeated for the side panel **12** on the other side of the chair.

With this construction, the side portions **16b** thus project outward from the side panels **12**. In the illustrated embodiment, these side portions are angled to provide a decorative effect. However, in alternative embodiments, parts of the side portions **16b** can be wider, or project farther outward from the side panels when the chair is constructed. These extended side portions **16b** can provide a

stable support surface immediately adjacent the chair or other article of furniture on which food, drink, decorative items or literature may be placed.

Next, the leg tab **25** of the back panel **14** is slid as far as possible into the back slot **32** in the base panel **16**. At the same time, the side notches **27** are simultaneously slid into the back notches **22** in the side panels **12**. The notches **27** and **22** interlock and overlap so that the locking extension **29** passes across the slot **20**, as seen best in the enlarged view of **FIG. 4** or in **FIGS. 1b** or **1c**. Since the base panel **16** has been pushed forward within the slot **20**, the locking extension **29** will contact a part of the cut-out **36** of the back panel **14**, helping to hold the base panel in this position.

In order to lock the RTA components together, the locking member **18** is pushed into a back portion **21** of the slot **20**. More specifically, the wedge portion **40** is pushed into the slot with the angled edge **43** bearing against the locking extension **29** and the cut-out **44** bearing against the end of the slot **20**. The angled edge **43** provides a variable contact and locking surface - i.e., the wedge portion **40** is pushed as far as possible into the slot **20** until the cut-out **44** and angled edge **43** are wedged between the locking extension **29** and back portion **21** of the slot **20**.

As shown in the enlarged view of **FIG. 4**, the wedge portion **40** bears against the locking extension **29**, which bears against the base panel **20** to wedge the panel into the slot **20**. It can be appreciated that the angled edge **43** allows periodic tightening of the wedge fixation by simply pushing the wedge portion **40** further into the slot **20**. Optimally, the locking member **18** will be

lodged within the slot so that the edge **18a** at the extension **42** is generally flush with the side edge **16c** of the base portion **16** and the edge **29a** of the back portion **14** to yield a finished appearance.

The construction of the components of the chair **10** can be firmly inter-engaged to establish a solid seating surface. One feature of the invention is that the length of the notches is kept to a minimum. One problem with prior knock-down furniture is that the interlocking notches extend across a substantial portion of the length or width of a furniture component. The notches are an inherent weakness in any interlocking construction of this type, so the point of failure of prior knock-down furniture was frequently at the notches. The present invention has acknowledged this problem by keeping the length of the notches to a minimum. Moreover, at the point of the greatest load - the clamping component - the clamping function is not achieved by interlocking notches but instead by a wedging action between panel surfaces.

In addition to the novel interlocking construction, the present invention contemplates a furniture system that can be quickly and easily converted between different articles of furniture. In the illustrated embodiment, the side panels **12** are identically configured so that they can be readily used on either side of the article of RTA furniture. Alternatively, the panels can be mirror configured, or provided in mirror-configured pairs, where the outboard surface has a different finish than the inboard surface of the side panels. This alternative configuration reduces the universality of the side panels, but allows for a custom outboard finish. (Note: for the purposes of the present disclosure, it is assumed

that "identically configured" encompasses "mirror configured" in reference to the RTA furniture panels. Moreover, the identical or mirror configuration refers primarily to the interlocking elements of the panels. Thus, opposite side panels can have different contours, provided that the interlocking elements, such as the slot **20**, notch **22** and ground-engaging elements follow the identical configuration theme).

In accordance with one aspect of the invention, the side panels **12** and locking members **18** can be common to a wide variety of articles of furniture. As shown in **FIGS. 1a-1c**, a chair **10** is formed by combining the side panels with "chair configured" back and base panels **14**, **16**. The love seat shown in **FIG. 5** can be created using the same side panels **12** and locking members **18** by simply substituting longer back and base panels **50**, **52**, respectively. The panels can be constructed to their counterpart panels **14**, **16** to form the same interlocking construction with the side panels.

In a similar manner, a table or ottoman shown in **FIG. 6** can be produced by a back panel **60** that is vertically shorter than the back panel **14** of the chair **10**. A base panel **62** can be utilized to form the table or ottoman. Preferably, the base panel **62** is identical to the base panel **16**, so that only the back panel need be substituted.

In addition to permitting easy conversion between articles of furniture, the RTA furniture of the present invention allows easy mixing and matching of panel colors and designs. For instance, a chair, such as chair **10**, can be more aesthetically pleasing to a child if each of the panels is in a different color. Thus,

one can maintain a supply of panels **12**, **14**, and **16** of different colors to change the appearance of the article of furniture as desired. Moreover, the panels can have different profiles to alter the overall aesthetic effect of the furniture. For example, the furniture shown in the present figures follow a generally angular or trapezoidal profile. Alternatively, the corners of the panels or even the panels themselves can be rounded and the legs **23a**, **23b** can be modified or combined according to taste. The chairs **65** and **67** shown in **FIGS. 7** and **8** illustrate the variability in configuration and appearance that can be achieved with the RTA system of the present invention. Again, as with the differently colored panels, one can maintain an inventory of panels with different profiles to permit ready modification of an article of furniture. In addition to different profiles and colors, the panels can carry different indicia or surface patterns.

A low-rise chair **70** shown in perspective in **FIG. 9a** further demonstrates the flexibility of the RTA system of the present invention. The chair is shown in side partial cross-section view in **FIG. 9b**, in top view in **FIG. 9c** and in front view in **FIG. 9d**. This chair **70** includes opposite side panels **72**, a back panel **74** and a base panel **76**, as with the chairs in the prior figures. The chair **70** also relies upon the wedge locking member **80** to provide the final tightening of the complete chair assembly. However, the chair adds a front panel **78** that essentially closes the front face of the chair.

The side panels **72**, back panel **74** and base panels **76** can include the same array of slots and notches as with the chair **10** illustrated in **FIGS. 1-3**. In order to accommodate the front panel, the side panels require some modification.

As shown best in **FIG. 9b**, the side panel includes a base slot **82** for receiving the base panel **76** and the locking member **80**. A generally vertical back notch **22** engages the back panel **74**. In a modification from the prior described chair, the side panels **72** also include a front panel slot **86** that intersects the base slot **82**. The front panel slot **86** is slightly longer than the height of the front panel **78**. The front panel includes its own notch **88** to engage the base of the slot **86** to lock the panel when the base panel **76** is disposed within the base slot **82**. Again, the wedge locking member **80** locks the entire ready-to-assemble low-rise chair **70** together.

This versatility not only improves a consumer's furniture options, it also presents a unique method of selling furniture. In one embodiment, the RTA furniture of the present invention can be sold pre-packaged with all the components for a specific article of furniture in one box. Auxiliary components can be sold separately, such as different back panels or base panels. In one approach, back and base panel pairs can be sold together. For instance, a chair conversion kit can have back and base panels of one length, while a sofa conversion kit can include back and base panels of a greater length.

In another embodiment, the components can be sold individually to allow the consumer unlimited choices for the RTA furniture. The components can have a variety of sizes, colors, profiles and surface patterns that can be mixed and matched at will by the purchaser.

The RTA furniture concept of the present invention can be constructed without the puzzle-like complexity of prior knock-down furniture approaches.

Moreover, each of the articles of furniture embodying this invention require only four panels and two locking members to provide a fully-functional, solidly built structure. This simple construction allows a consumer to quickly replace a damaged component, or change out components for a different decorating effect.

The wedge portion of the locking member provides a solid, yet adjustable, clamping of the furniture panels. The wedging feature of this invention relies upon surface-to-surface pressure contact between components to achieve a solid fixation. Moreover, the locking member operates and locks all three panels at a side so that all panels are, in effect, inter-engaged with each other. This feature provides a significantly more rigid construction than prior knock-down items in which the locking feature is limited to less than all of the furniture components. Many of those ill-fated prior items relied instead upon loosely interlocking certain components, while locking a couple of key components to prevent disengagement of the other components. This approach allowed a great deal of slop or movement between interlocked components, a problem that is not suffered by RTA furniture constructed according to the present invention.

While the locking member of this invention produces a solid furniture construction, it also makes disassembly of the furniture very easy. The furniture components can be separated by simply dislodging the wedge portion **43** of the locking member **18** from the slot **20**. This can be accomplished by manipulating the extension **42** of the member **18** until the wedge portion is loosened. Since the locking member is configured to follow the contour of the base panel, it is not susceptible to accidental dislodgement.

In an alternative embodiment of the locking member **18**, a torsion spring or other spring action device, not shown, may be used to further secure the member **18** within the slot **20**. To this end, the spring action device may for example include a countersunk torsion spring that is disposed within a countersink opening in the cut-out **44**. When the member **18** is within the slot **20**, the spring action device would tend to force the member **18** against the edge of the seat **16** to further secure the member **18** in place. It may be advisable to reduce the sloping aspect of surface **43** in such an embodiment. Other spring-loaded configurations may also be employed. The use of spring loading may increase the ability to retain structural integrity after the wood ages for a significant time.

Accordingly, the present invention provides an RTA furniture article, as well as an RTA furniture system, that incorporates style, convenience, and can be produced, stored, shipped and manufactured relatively inexpensively. At least some of the structure features may be carried over into other RTA interior design elements, such as, but not limited to, bookshelves, plant stands, magazine racks, office partitions (cubicles), lighting, sculpture. Depending on the proper selection of materials, the RTA furniture of the present invention is suitable for outdoor use as well as indoor use.

The RTA furniture system of the present invention also contemplates a padded chair **90** as part of the furniture line. This chair **90** is depicted in perspective, side, top and front views in **FIGS. 10a-10d**, respectively. As with the prior wedge-locked chair **10**, the chair **90** includes side panels **92**, back panel **94**, base panel **96** and wedge locking member **97**. However, the base panel **96**



includes a padded portion **96a** that can be affixed to or integrated into the base panel **96**. In order to accommodate the thicker padded portion **96a**, the base slot **98** in the side panels **92** is thicker than the base panel itself and thick enough to allow the padded portion to pass therethrough.

The padded chair **90** also illustrates another feature of the RTA furniture system of the present invention. Since the padded base panel requires a wider base slot **98**, a degree of "slop" is present in the positioning of the base panel. In order to eliminate this "slop", the present invention contemplates a base locking member **99** that bears against the underside **96b** of the base panel. More specifically, the base locking member can be configured as shown in **FIG. 11**. The locking member **99** can be generally elongate and oval in configuration, having rounded ends **99a**. The locking member **99** is slightly shorter than the length of a slot **94a** formed in the back panel **94**. The slot **94a** is arranged on the panel to be situated directly adjacent the underside **96b** of the base panel **96** when the chair is assembled. The base locking member **99** can be pressed into the slot **94a** so that the member bears against the base panel **96** and provides a slight upward force against the panel to push it against the upper edge of the base slot **98** in the side panels. The wedge locking members **97** can then be pressed into position to lock the entire assembly together.

This same combination of wedge locking member **97** and base panel locking member **99** can be implemented in a wide range of furniture items. A rounded chair is depicted in **FIGS. 12a-c**, and asymmetric chair in **FIGS. 13a-b**, a wide chair in **FIGS. 14a-b** and a traditional chair in **FIGS. 15a-b**. The same

principals can be applied to longer furniture, such as the love seat/bench of **FIGS. 16a-d**.

As described above, the RTA furniture of the present invention can be formed of plastic. A plastic beach chair according to one embodiment of the invention is depicted in **FIGS. 17a-d**. The beach chair **130** includes side panels **132** that incorporate a stiffening flange **133** at the upper edge of each panel. The flange **133** is preferably wide enough to double as an armrest. The flange **133** defines a notch **133a** to receive the back panel **135**. The back panel **135** also includes a stiffening flange **136** projecting to the rear of the chair **130**. The stiffening flanges add rigidity to the panels to resist bending or bowing of the panels when a consumer is sitting in the chair.

The beach chair **130** also includes a base panel **138** that is held within the chair by the wedge locking member **97** and base locking member **99** as described above. In certain embodiments, the base panel **138** can include a drink holder **139** formed in the plastic material on one or both sides of the chair.

Thus far, the furniture items describe above that use the wedge locking member **18, 97** alone or in conjunction with the base locking member **99** have been seating items. However, these same concepts can be applied to other types of furniture. For instance, a book shelf **140** is shown in **FIG. 18a**, and in the side, top and front views of **FIGS. 18b-d**. The book shelf **140** includes opposite side panels **142** and a back panel **144**. The back panel is shown tapered from top to bottom for a decorative effect; however, the panel can span the entire width of the book shelf according to taste.

The book shelf **140** also includes a number of shelf panels **146**. Each shelf panel is connected to the side panels and back panel using the same type of slots and notches implemented with the chair **10**, for instance. In addition, each shelf panel **146** can be held in place, and the entire RTA assembly locked together using a plurality of wedge locking members **97**. It can be noted that only the top-most wedge locking member **97** bears against the back panel **144** in the manner describe above. The lower locking members only wedge against the corresponding shelf panel, since the back panel does not project through an associated vertical slot in the side panel.

In the illustrated embodiment, the lowermost shelf panel is maintained by a base locking member **99**, again in the manner described above. Alternatively, each shelf panel can include a corresponding base locking member **99** to provide additional vertical support and load-bearing capability. One or more of the shelf panels can be configured to support sliding doors **148** as shown in **FIGS. 18a, d**.

The same concepts implemented to form the RTA book shelf can be used to form a sofa table, such as the table **150** shown in **FIG. 19**. The construction and assembly of this table is similar to the book shelf. Likewise, the same principals can be applied to create a desk **160**, shown in **FIGS. 20a-c**, or a server/buffet, as shown in **FIG. 21**. Both furniture items utilize both the wedge locking member **97** and the base locking member **99**, with the latter locking member used to support the table top, such as desk top **162**.

The locking members described above can also be used on smaller decorative or furniture accessory items. For instance, the present invention

contemplates a lamp assembly **155**, as shown in **FIGS. 22a-d**. The lamp assembly supports a lamp **L** and its wiring **W**, as shown in **FIG. 22a**. The assembly **155** includes a vertical panel **157** that defines a vertical slot **158** extending along a substantial portion of its length. The slot is configured to receive a transverse panel **159** that defines a mating notch **161** at its bottom edge. At the top edge of the transverse panel **159** are a pair of spaced-apart notches **160** that straddle the vertical panel **157** when the transverse panel is situated within the slot **158**.

The notches **160** are configured to receive a pair of support members **162**. The support members **162** preferably form a flat surface to support a top plate **164** that is connected to the top of the vertical panel. In particular, the top plate **164** defines a slot **165** through which the top of the vertical panel **157** extends. The top plate can define a wiring hole **166** and a lamp hole **167** for supporting those respective components of the lamp. The entire assembly is held together by a wedge locking member **168** that fits through the upper portion of the vertical slot **158** in the vertical panel **157**. The wedge locking member bears against the top surface of the top plate **164** to push the panel against the support members **162**.

The construction of the lamp assembly proceeds according to the steps shown in **FIGS. 23a-d**. In the first step, the transverse panel **159** is mated with the vertical panel **157**. The support members **162** are added in the next step of **FIG. 23b** and the top plate mounted over the vertical panel, as shown in **FIG. 23c**. In the final step, the wedge locking member **168** is pushed into the top of

the vertical slot **158**. The locking member **168** preferably includes a curved edge **159** to provide a camming effect as the member is pushed further into the slot. The locking member presses the top plate against the support members to firmly lock the lamp assembly **150** together.

The invention also contemplates a picture frame that utilizes the wedge locking member to complete its construction. As shown in **FIGS. 24a-d** and the assembly drawings of **FIGS. 25a-d**, the picture frame **170** includes a front panel **172** that defines a picture opening **173**, along with a vertical slot **173** and a horizontal slot **175**. A complementary shaped backing panel **176** also defines coincident vertical and horizontal slots **177**, **178**, respectively. The front panel **172** need not include a separate opening **173** provided that the panel is formed of a material through which a picture is visible. For instance, the front panel **172** can be formed of a clear thermoplastic to provide an entirely transparent face.

The two frame panels **172** and **176** are held together by a vertical support member **174** that includes a notch **174a** for mating within the vertical slots **174**, **178**, in accordance with the construction step shown in **FIG. 25b**. A wedge locking member **182** is then pressed into the top of the slot **174** to lock the support member **181** therein, as shown in **FIG. 25c**. A similar approach is applied at the horizontal slots **175**, **178** with a horizontal support component **184** and wedge locking member **185**. Each of the locking members can include a flat edge, such as the member **182**, or preferably a curved edge, such as edge **186** of the member **185** in order to produce the camming effect described above.

The two locking members solidly combine the two frame panels **172, 176** to form the completed picture frame **170**. The vertical and horizontal positioning of the support members **174, 184** allow the picture frame to stand in two orientations.

While the invention has been illustrated and described in detail in the drawings and foregoing description, the same should be considered as illustrative and not restrictive in character. It is understood that only the preferred embodiments have been presented and that all changes, modifications and further applications that come within the spirit of the invention are desired to be protected. Other style variations of furniture and accessories may readily incorporate the principles of the present invention.

For instance, it can be appreciated from a comparison of the articles of furniture shown in the figures that the wedge locks can be of a wide range of sizes and configurations. The wedge lock **18** for the chair shown in **FIG. 1a** is tapered, while the wedge lock **80** shown in **FIG. 9a** is more rectangular in outer shape, and the wedge lock **97** in **FIG. 13a** is more rounded. Likewise, the wedge locks can have different exposed lengths, as can be seen by comparing the wedge lock **18** of **FIG. 1a** to the wedge lock **97** of **FIG. 10a**.